

Date: September 20, 2011

To: Thomas J. Bonfield, City Manager
Through: Theodore L. Voorhees, Deputy City Manager
From: Donald F. Greeley, Director, Water Management
Jerry F. Morrone, Utility Engineering Supervisor
Subject: Sanitary Sewer Lift Station Prioritization and Rehabilitation Project

Executive Summary

The Department of Water Management issued a Request for Qualifications (RFQ) for engineering services to assess the mechanical, structural, and electrical condition of 57 of the City's 62 sanitary sewer lift stations. This project will also evaluate operational and preventive maintenance protocols. The project will result in a prioritized set of capital and O&M projects to improve conditions and reliability of the lift stations; a database of equipment inventory; assist in the parallel development of the Department's CMMS; and enhance preventative maintenance.

Brown and Caldwell Inc. was selected and a contract negotiated for an initial services contract. The total value of the contract, including contingency, is not to exceed \$743,100. This contract provides for professional engineering consulting services for the Sanitary Sewer Lift Station Prioritization and Rehabilitation Project.

Recommendation

The Department of Water Management recommends that the City Council:

1. Authorize the City Manager to execute a contract with Brown and Caldwell for engineering services for the Lift Station Prioritization and Rehabilitation Project in the total amount not to exceed \$676,100; and
2. Establish a contingency fund for the contract of \$67,000; and
3. Authorize the City Manager or his designee to negotiate change orders for the contract provided that the cost of all change orders does not exceed \$67,000 and the total project cost does not exceed \$743,100.

Background

The City owns and operates 62 sanitary sewer lift stations. They have been built and designed by a combination of private developers, City staff, and different consultants. Some lift stations were acquired during annexation. The result is a non standardized set of stations of varying types, sizes, equipment manufacturers, designs, and quality. Also, some stations and/or their equipment are nearing the end of their life cycles. The variability and age of these stations create inefficiencies and require additional resources and manpower from operations and maintenance personnel. For example, the Department must stock spare pumps or electrical components from several manufacturers, which require different types of installation methods, tooling, and repair methods. Levels of service and warranties from suppliers and manufacturers also vary.

The conditional states of mechanical, structural and electrical components require evaluation. This is in large part due to the age of some stations, but also in the corrosive environment some newer stations exist. The Department's overall O&M procedures for replacing/repairing failing equipment and addressing readily-apparent maintenance issues has not included engineering evaluations of concrete or steel wetwells, electrical modifications performed by different personnel (sometimes decades apart), and pumping and screening equipment operating under different working conditions from what they were originally designed.

To better plan these efforts and coordinate the upgrades of the lift stations, the Department identified the need to perform a holistic assessment of the lift stations' conditions and determine a clear path to rehabilitating and retrofitting the stations. The main goals of the Department in this effort are;

- 1) Developing the base data necessary for the implementation of a preventative maintenance program and uniformly assess the condition of the lift stations.
- 2) Developing a long term capital improvement plan that allows for proper planning for replacement and rehabilitation costs.
- 3) Developing a standardized lift station design
- 4) Identifying opportunities to streamline maintenance activities and standardize equipment throughout the system.
- 5) Develop consistent Operations and Maintenance Procedures
- 6) Meet or exceed all OSHA and Environmental standards for the operation of our lift stations

The Department issued a RFQ for engineering services to assess the mechanical, structural, and electrical condition of 57 of the City's 62 sanitary sewer lift stations. The five (5) stations not included in the project have been targeted for elimination by extending short sewer outfalls to take them out of service. We anticipate the stations to be taken out of service within the next 2-3 years.

Issues/Analysis

In order to select a consulting firm to perform these services, a RFQ was prepared and advertised. Responses were received from the following firms:

AECOM	Hazen and Sawyer
Black and Veatch	Hydrostructures
Brown and Caldwell	KCI
CDM	Kimley-Horn
Dewberry	Pirnie Arcadis
Green Engineering	O'Brien and Gere
URS	

The selection panel for this project had members from the Equal Opportunity/Equity Assurance Department and the Department of Water Management. The panel selected three qualified firms to interview, Brown and Caldwell, Pirnie Arcadis and Camp Dresser and McKee. The panel selected Brown and Caldwell to perform this work. Brown and Caldwell included qualified personnel on the project team, has extensive experience with lift stations assessment and has excellent knowledge of the all components of the project.

Alternatives

Not moving ahead with the project. - To continue to use the existing facilities without any upgrade may result in reduced functionality of the system, increased Sanitary Sewer Overflows (SSO's) and an inefficient and unplanned rehabilitation program.

Financial Impacts

Funds for this contract are budgeted in the Sewer Collection System Rehabilitation Project in the City's Capital Improvement Program. There are currently funds available in these accounts:

Lift station assess - ENG	\$	676,100.00	4100P765-731004-P280B
Lift Station contingencies	\$	67,000.00	4100P765-731900-P280B
Total	\$	743,100.00	

SDBE Summary

The Equal Opportunity/Equity Assurance Department reviewed the proposal submitted by Brown and Caldwell of Raleigh, North Carolina to determine compliance with the Ordinance to Promote Equal Business Opportunities in City Contracting. The goals for this project are MSDBE 3% and WSDBE 2%. It was determined that Brown and Caldwell is in compliance with the Ordinance to Promote Equal Business Opportunities in City Contracting.

SDBE REQUIREMENTS

Brown and Caldwell will subcontract to the following certified firms:

Firm	ID	City/State	Amount	% of Contract
A-1 Consulting Group, Inc.	SDBE*	Morrisville, NC	\$ 20,000.00	3%
CH Engineering, PLLC	WSDBE	Raleigh, NC	\$ 13,500.00	2%

*A-1 Consulting Group, Inc. is an Asian American SDBE firm and was used to fulfill the MSDBE goal requirement for this project in compliance with the Ordinance to Promote Equal Business Opportunities in City Contracting.

WORKFORCE STATISTICS

Workforce statistics for Brown and Caldwell are as follows:
(Consolidated)

Total Workforce	1391	
Total Females	483	(35%)
Total Males	908	(65%)
Black Males	20	(1%)
White Males	759	(55%)
Other Males	129	(9%)
Black Females	16	(1%)
White Females	382	(28%)
Other Females	85	(6%)

Attachments

Scope of Services